Improving time stability or allowing measurement of electrical conductivity of active film material on non conducting substrate

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Abstract of **FR 2762679 (A1)**

The improvement in stability or allowing the measurement of the electrical conductivity of an active film material on a non conducting substrate consists of an intercalated layer of organic molecules bonded covalently to the substrate or to the electrodes at the interface between the conducting substrate and the active film and at the interface between the electrodes and the active film. The molecules comprise of an organic group which can improve mechanical or electrical properties between the active film and the metallic electrodes and between the active film and the substrate. The molecules of the intercalated layer called 'first' between the substrate and the active film are different from those called 'second' between the metallic electrodes and the active film. The first molecules are bonded to the non conducting substrate via the Si atoms whereas the second molecules are bonded via S or N atoms. The deposition of the film is carried as follows; (a) deposition of a monomolecular layer of the first organic molecules containing a hydrophile group which can promote adhesion, on the non conducting substrate containing silica (b) deposition of the flat metallic electrodes on certain zones of the treated substrates (c) deposition of a monomolecular layer of the second organic molecules onto the metallic electrodes (d) deposition of the active film on the treated substrate and treated electrodes The conductimeter probe comprising of a non-conducting substrate with thin metallic electrodes on certain zones of the surface and coated with an active organic or organo-mineral film,; in contact with the substrate and the electrodes consists of an intercalated layer of organic molecules bonded covalently at the interface between the substrate and the active film and at the interface between the electrodes and the active film. The organic molecules have similar properties as described above. The intercalated layer is chosen from hydrophile, hydrophobe groups and groups forming a chemical bond with the active material. The substrate is a silica based material and the metallic electrodes are precious metals.